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AN INTRODUCTION TO THE SOCIAL-PSYCHOLOGY OF SCHOOL-TO-COLLEGE TRANSITION

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Recent years have witnessed a rebirth of interest in the social psychology and sociology of education. As the number of national and international issues which have a direct bearing on educational processes and outcomes increases, and as the level of popular concern with educational content and quality mounts, it is only natural that social scientists, too, should become progressively more involved in this general topic area. The growing number of empirical and theoretical social science inquiries into educational matters and the increasing number of symposia, reports and workshops on educational issues at the annual meetings of the American Psychological Association and the American Sociological Association are the best indicators of this growing involvement. The greater availability of public and private funds for social science research in the field of education is a sign that the ingenuity and technical proficiency of the social scientist is coming to be appreciated in yet another complex area.

Within the sequential structure of American education higher education particularly has been in need of social science inquiries. Although a few perceptive investigators produced extremely important studies in this area during the past quarter century, it has, until quite recently, commanded less social science interest than have either elementary or secondary education. Higher education was long widely considered to be a luxury of the rich and the select. It was popularly associated with the "absent-minded professor" and with his impractical, theoretical proclivities. Social scientists may have tacitly shared this view, for otherwise it is hard to explain why they so long ignored that which was closest at hand — the colleges and universities with which the great majority of them were and still are associated. The phenomenal growth of college going in the past decade has virtually forced social scientists to overcome this blind spot of earlier days.

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Not only did they become aware of the pressing problems of student selection and guidance, of faculty recruitment and morale, and of institutional evaluation and characterization, but they came to realize that higher education provides a "natural" setting for the pursuit of important theoretical issues within the social sciences proper. Thus the study of personality development during the college years both drew upon and contributed to developmental psychology and personality theory, while the study of institutional differences and similarities both depended upon and became a stimulus to organization theory and stratification theory. In sum, the social psychology of higher education is well on its way toward becoming a field that is simultaneously rich in application and provocative to theory.

School-to-college transition is a particularly young topic within the purview of social science interest in American higher education. Until a few years ago this topic was primarily of interest to psychometricians of scholastic aptitude and achievement on the one hand and to college counselors (in high schools) and admissions officers and Freshmen Deans (in colleges) on the other hand. The social psychologist and sociologist were practically unknown in this domain. This journal issue is itself a reflection of the changed state of affairs. A still small but constantly expanding group of social scientists has become concerned with college striving, college entering and college adjusting as social processes. The concentrated energies of a very few research-oriented organizations (foremost among them the College Entrance Examination Board, the Educational Testing Service, the Center for the Study of Higher Education, the National Merit Scholarship Corporation, and the Bureau of Applied Social Research) have resulted in a substantial number of exemplary studies within a short time-interval. The stimulation provided by such studies will inevitably elicit many others in the years immediately before us.

The foundations of college striving, college selection, and college attendance are found in the home, the community, and the high school. In this sense, these processes begin much *before* college admission and end much *after* it. We are just now beginning to appreciate the subtlety and complexity of the interplay between ability factors and ideologies, attitudes, roles, and statuses. We are also just beginning to appreciate the diversity of human and institutional characteristics that are involved in school-to-college transition, even when no more than a single campus is involved in our inquiry. When we seek to focus upon the nation as a whole, the total school-to-college transition process appears to be an infinitely bewildering and chaotic one. Somehow, students intuitively sort themselves and each other (correctly or

incorrectly) with respect to being "good enough for college" against a background of institutional images and local community and high school characteristics. Somehow, teachers and admissions officers sort aspirants and applicants against a backdrop of presumed college criteria and standards. Somehow, college faculties and administrators sort and re-sort desiderata and students in the hope of ultimately rationalizing the transition from school to college. Finally, the great valuational sortings that are provided by social class, by ethnic group, by sex, and by religious affiliation somehow guide individuals to levels of performance, to vocational choices and to other college behaviors which convert the transition to college into a continuation of stable life styles. It is all of these "sortings" and "somehows" that we must seek to illuminate.

As college going becomes an increasingly "universal" American experience, an understanding of the social psychology of school-to-college transition will necessarily take on increasing national significance. It is in the hope of contributing to this much needed understanding that the current issue of the Journal of Educational Sociology seeks the attention of American educators and social scientists alike.

The articles that follow do not pretend to exhaust the topics of social science interest in the school-to-college transition area. Each of them was originally presented at an annual meeting of one or another social science association. Although the topics covered in these papers undoubtedly bridge a wide range of school-to-college phenomena, they have been selected not in order to cover the field but, rather, in order to present examples of recent independent efforts devoted to it.

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PUBLIC SCHOOLS AND EQUALITY OF OPPORTUNITY*

Natalie Rogoff

INTRODUCTION

While the other papers in this symposium deal with college students and with matters of higher education, it is *entrance into* college that is the problematic concern of the paper that follows. Once enrolled in college, students exhibit variation in classroom performances, interests, and orientations to the major institutions of society. However much of these divergences spring from experience on the campus itself, dissimilarities in provenience of America's college students — whether of place of residence, ethnic affiliation, or of social class — contribute their share as well.

From the point of view of learning more about higher education, it is well to know as much as possible about the *origins* of student recruits. But in fact it is at least as important to reverse the question, and to compare the *destinies* of young people — particularly, their chances of going to college — who come from unlike educational, familial, or community backgrounds. The following remarks will develop some reasons for claiming the significance of this field of inquiry.

Diversity stands out as the quality best describing the American educational scene. But clear though the signs of diversity may be, the implications are not. What are we to make of all the variations we know to exist in our schools? As a touchstone, as a principle for organizing and evaluating the observations we make, the ancient but still unanalyzed idea of equality of opportunity has a great deal to recommend it. What do we mean by equality of opportunity? What social and educational arrangements make it easiest to realize? Does it ever conflict with other accepted social aims? These questions assert themselves as some of the keystones of social research on education.

First, to hallow and enrich the problem, one of the oldest, most beautiful and clearest expressions of the ideal will be cited — Plato's parable of the metals in *The Republic*. Plato proposes that the people be told a deliberate falsehood, an old Phoenician tale that all men were brought to maturity in the bowels of the earth, that the soil of their country is thus their mother and all their fellow citizens, brothers. Then they are to be told:

> "Citizens, . . . you are brothers, yet God has framed you differently. Some of you have the power of command, and in the

* Revision of a paper presented at the annual meeting of the American Psychological Association, September 1958. This article may be identified as publication No. A-295 of the Bureau of Applied Social Research, Columbia University.

> composition of these he has mingled gold, wherefore also they have the greatest honour; others he has made of silver, to be auxiliaries; others again who are to be husbandmen and craftsmen he has composed of brass and iron; and the species will generally be preserved in the children. But as all are of the same original stock, a golden parent will sometimes have a silver son, or a silver parent a golden son. And God proclaims as a first principle to the rulers, and above all else, that there is nothing which they should so anxiously guard, or of which they are to be such good guardians, as of the purity of the race. They should observe what elements mingle in their offspring; for if the son of a golden or silver parent has an admixture of brass or iron, then nature orders a transposition of ranks, and the eye of the ruler must not be pitiful towards the child because he has to descend the scale and become a husbandman or artisan, just as there may be sons of artisans who having an admixture of gold or silver in them are raised to honour, and become guardians or auxiliaries. For an oracle says that when a man of brass or iron guards the State, it will be destroyed."[1]

Lifetimes of useful work could be devoted to searching out all the ways of applying modern social science theory, techniques and knowledge to Plato's ideas. Here are some of the elements to be made use of. There are rulers or guardians, who, for our purposes, observe the children of the Men of Gold and the Men of Brass and play a part in assigning them to whatever role they seem best capable of filling. Who are the guardians of modern American society, and how do they make assignments?

Let us confine our attention to the secondary schools in the United States today. Certainly one of the consequences of prolonging the years of compulsory education is to keep most of the children in the limelight, to increase their visibility to the "guardians" and to increase the number of guardians by whom they are observed — all of which conditions perhaps lead to more accurate and objective judgments of their worth. But the thousands of schools differ among themselves in bewildering fashion; do any of these differences lead to impairing the work of the guardians in their crucial role of seeing gold, silver, and brass wherever they are found?

How, for example, could the matter of a school's size, now more than ever under scrutiny since President Conant's emphasis on it,

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[1] Plato, *The Republic,* Book III, Modern Library edition, p. 125.

affect its capacity to observe and assign each student to his most appropriate role?

Are small schools in a better or a worse position than large ones to evaluate their students? Immediately a number of empirical questions come to mind: is the size of a school related to the frequency and objectivity of the performance tests its students take? Is size associated with the "clear-sightedness" of teachers, that is, their capacity to make sound judgments of students? Does a small school give a few teachers the opportunity to make many observations, while a large school gives many teachers the opportunity to make only a few observations of each student? If these are the most frequent patterns, which of them is the more effective?

Enlarging the problem, a school's size is not unrelated to other structural and institutional attributes. To consider only one, smaller schools are more isolated from the great centers of population and from the larger society as a whole. This may lead to less awareness of the standards of performance by the average American student, so that no matter if teachers at small schools see a great deal more of their students, their evaluations may be less correct because of their remoteness from national norms.

No indictment of small American high schools is intended by these remarks, which are incidental to and illustrative of a more basic idea — that the structure of our schools may, in a totally unplanned way, lead to inequalities in the opportunities students have for being evaluated and selected for the roles in society for which they are well suited.

For another example, a puzzle in Plato's statement provides the stimulus. Recall that he began with a preposterous myth and was in fact so ashamed of proposing to pass it off that he said to Glaucon, "I really know not how to look you in the face, or in what words to utter the audacious fiction." Devoted as he was to the search for truth, what impelled Plato to propose so extreme a departure from it? Let me suggest that the myth of autochthony is a brilliant, poetic solution to perhaps the greatest impediment to equality of opportunity. To persuade all the citizens of a state that they spring full grown from its soil, which bore and nurtured them all, is absurd precisely because it denies all the loyalties, ties, identifications, and memories linking each individual with his own family, clan, race, and religion. All these sources of separateness, of individual or group uniqueness, make of any society a collection of better or more poorly integrated sub-groups, each of which presses its claims of superiority and none of which refrains from that sense of pity for its inferior offspring which Plato saw as a major deterrent to true equality.

To return to our own time and location, not only do we live in a more than usually heterogeneous society but the separate sub-groups in America have a noticeable impact on the schools and colleges here. On the one hand, the vast system of private schools, colleges, and universities has been spawned by this very sense of religious, ethnic, and regional separateness. On the other, the residential propinquity of sub-group members — Catholics, Jews, Negroes, lower class persons, or Swedes, for example, tending to live in settlements each with his own — gives to many public schools a membership of both students and teachers predominantly affiliated with one such social category, whether it be of a religious, ethnic, or class character. Not all public, nor indeed all private schools share this quality, which means that only some of our young people experience the pleasures and pains of attending schools that are socially heterogenous.

What influence does this quality of our schools have on the chances of each student to be seen for what he is and selected for an appropriate adult role? Does the evaluation of a lower class, or a Protestant, or a Japanese child, let us say, depend on whether he attends a school where lower class or Protestant or Japanese children predominate rather than a school where children from his background are mixed in equal or unequal parts with others? The current state of knowledge bearing on this question is such that we might be led to any one of the possible answers to it. That the problem is complex is undeniable; we need to know in detail, among many other things, how this structural attribute of schools is related to the behavior and the qualifications of teachers, how it affects informal relations among students, and how it bears on the interaction between students and teachers.

This only begins the program of studies that might be carried out, using equality of opportunity as an ethical, a theoretical, and a technical yardstick. To throw a few more coals on the fire, we need to distinguish between the role of schools in furnishing young people with equal chances of being *selected* for and of being *provided* with appropriate educational and other opportunities. We need to distinguish between our schools' performances in recognizing talent and in knowing how best to utilize it. And between deliberate and unanticipated barriers to equality of opportunity. And between those sources of inequality which are connected with other of the major institutions in society — the family, the church, and economic and political institutions — in contrast to those stemming primarily from schools and colleges themselves. The work will take us far outside the orbit of the classroom, as research on education always has done, but perhaps the connections with the outside world will be better

apprehended and of more point if this compelling principle furnishes the motive power.

SPECIFYING THE IDEA OF EQUALITY OF OPPORTUNITY

To advocate such a program of research is gratifying; to initiate it is perilous and sobering. In the following remarks, the reader will find untested assumptions, oversimplifications, and arbitrary selection of problematic elements. Time, work, and the help of others will, hopefully, reduce these.

Here are some of the things that have to be specified in order to apply the concept of equality of opportunity. First, between whom should there be equality of opportunity? Presumably, between those who "deserve" it equally, or those of equal capacity to take advantage of given opportunities. So we must have some way of classifying individuals according to their capacities — a task that psychologists, at least since the time of Binet, have taken as a serious and continuing responsibility.

Next, we have to have some ideas about the major sources of *inequality.* This is necessary because we must be able to compare the opportunities available to those equal in capacity but unequal in some respect that we believe affects their chances of getting such opportunities. Here we are in a fortunate position, because there is so vast an amount of previous research all of which shows the central role of *social class* as one of the leading sources of inequality.

Finally, we should specify the nature of the opportunities most crucial to the life chances of individuals. What are the rewards which should be equally available to those of equal capacity? Once again, we do not have to rely on our own efforts to find an answer. *Higher education,* to an increasing extent, is perhaps the major gateway to the personal and social rewards available to the members of modern industrial societies. While in the past it was only one of several alternatives, more and more higher education preempts the part formerly played by inherited wealth, personal daring and energy, or the slow climb from job to next higher job.

We already know a great deal about the empirical relations among ability, social class, and access to higher education, and even something about the processes underlying these relations. But we have not yet looked at the facts in connection with various patterns and possibilities of equality of opportunity. Some of the patterns are sketched below.

A. The "Radical" Pattern

For centuries, men have dreamed of ideal societies wherein all persons of equal capacity would be treated alike, without respect to

their social origins. A very crude translation into contemporary research language might be as follows:

Let R_{ij} be the rate of college-going among persons of ability level i and social class j.

Then, $R_{aa}=R_{ab}=R_{ac}= \ldots R_{an}$, and $R_{aa} > R_{ba} > R_{ca} > \ldots R_{na}$.

Equal ability would lead to equal rates of college-going, no matter what the social class background, and higher ability would always lead to higher rates, no matter what the social class.

B. The "Moderate" Pattern

Although not as readily put into ideological form, a moderate set of views on equality of opportunity would go about as follows:

To strive for a set of selection processses that puts every person in a social class according to his ability may be not only impossible, but perhaps not even desirable. Native ability is modified continuously by myriad social mechanisms. To overcome their force might lead to such disruptions of the social structure that, had we the knowledge, we might actually prefer not to pay so high a price.[2] Therefore, not ability alone, but some combination of ability and its social "facilitators" and "detractors" (here represented by social class) should be taken into account to produce the following pattern of opportunity (college-going): $R_{aa} > R_{ba} > R_{ca} > \ldots R_{na}$, and $R_{ab} \rightarrow R_{ba}$; $R_{ij} \rightarrow R_{ji}$, but $R_{aa} > R_{ab} > R_{ac} > \ldots R_{an}$.

The first condition specified is certainly the simplest: within a given social class, the college-going rate is higher at higher levels of ability. The third condition states, however, that the rate is higher in more favored social classes at every ability level. In other words, social class facilitates college-going, independent of ability. Finally, the second condition attempts to say something about the *relative* weight of ability and social class in affecting the college-going rate, and specifies that ability should have an effect equal to or greater than that of social class position.

C. The "Conservative" Pattern

The stance of the conservative toward equality of opportunity is easily discerned from what has been said before. It is his position that, in the long run, we delude ourselves if we believe that talent

[2] Michael Young, in his recent book, *The Rise of Meritocracy* prophesies, with grace and humor, the disastrous, unanticipated consequences for a society which realizes the goal of equality of opportunity. Writing a "social history" of England from 1870 to 2033, Young foresees the doom of a social system wherein all persons with talent really do rise to the top, leaving nothing but mental dullards to carry out the humble manual work.

Lewis Burke Russell Library
NOT TO BE TAKEN FROM THIS ROOM

and ability observed among the lowest social classes should be taken seriously and encouraged. What really counts is the character of the social class into which the youngster was born. Society will be better off if it allocates opportunities according to social class and does not try to tinker with the biological and socially reinforcing mechanisms that have worked well enough for centuries.

In our crude terms, the conservative pattern is described by the following conditions:

$R_{aa}=R_{ba}=R_{ca}= \ldots R_{na}$, and $R_{aa} > R_{ab} > R_{ac} > \ldots R_{an}$.

The pattern of opportunity would show no sensitivity to ability but would decrease at successively less favorable social class positions.

Though stated here in the optative mode, the radical, moderate, and conservative patterns of equality of opportunity will serve equally well as a crude research tool. In fact they are nothing more than a way of evaluating the relative effect of two "independent variables," i.e., social class position and talent or ability, as such evaluations are ordinarily made in multivariate analysis. There is one difference, however. Much of the time, survey analysis deals with a single "population" and attempts to discern the underlying links among various attributes concerning that population. But here, we have in mind a way of comparing one population with another, describing each by its relative position between the radical and conservative extremes. A more adequate statement of this point must be deferred until a later occasion.

The criteria of equality of opportunity proposed here are unlike those generally invoked by others interested in the problem. It is customary, for example, for comparisons to be made of public expenditures for education, or of the training of teachers, the average size of classrooms, and so on, between different states or regions of the nation. Differences in such standards are then cited as evidence of "inequality of opportunity" between residents of the states or regions. But this seems to miss at least one aspect of the concept. Equality of opportunity refers to the way *individuals* are treated relative to one another; as T. H. Marshall has suggested, it stands for "the equal right to display and develop differences, or inequalities; the equal right to be recognized as unequal."[3] It is an empirical question as to whether one community or region with a high level of "opportunity," however we choose to indicate that term, allocates those chances more equitably, i.e., in closer correspondence to individual differences among its residents, than does a community or region with a low level of opportunity.

[3] T. H. Marshall, *Citizenship and Social Class*, Cambridge University Press, 1950, pp. 65-66.

III

Empirical Application

The rather simple and crude patterns described above for evaluating equality of opportunity have already proved useful in organizing various sets of empirical data now under scrutiny at the Bureau of Applied Social Research. We were fortunate enough to gain access to information collected by the Educational Testing Service concerning the college-going and career plans of over 35,000 American high school seniors, who constituted the "Class of 1955" at over five hundred public secondary schools. Information concerning the schools (a fairly representative sample of the 20,000-odd senior public high schools in the United States) was collected from the principals at the time of the field work.[4] This has since been supplemented by consulting national and state school directories, other listings and surveys, and census material pertaining to the towns and counties where the schools are located.

The key element in the design of the survey is the inclusion of over five hundred schools, representingg almost as many communities. This permits the close study of communities and neighborhoods, both in their own right, and as contexts which may affect the behavior and orientations of the young people located in them. Among other things, we are in a position to see whether some types of communities conform to the "conservative" pattern of equality of opportunity, others to the "moderate" or "radical" patterns. Although this work is still in a preliminary stage, it is possible to report that communities *do* vary in this respect. Some towns — perhaps the smaller and less well-to-do, if the tentative evidence is later confirmed — are relatively close to the conservative pattern, allocating opportunities more on the basis of a youngster's class position than of his ability; others — again tentatively, wealthier and larger communities — appear to come closer to the radical pattern, showing more sensibility to their students' talents than to their social origins.

It is not too early, however, to suggest that inquiries into the state of affairs concerning equality of opportunity is a desirable field of social investigation, with serious implications for understanding schools, communities, and the stratification hierarchy.

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[4] See the following mimeographed reports prepared by the Educational Testing Service: Glen Stice, W. G. Mollenkopf, and W. S. Torgerson, "Background Factors and College-Going Plans among High-Aptitude Public High School Seniors," 1956; and "Background Factors Relating to College Plans and College Enrollment among Public High School Students," 1957.

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SUB-CULTURE AND PERSONALITY DURING THE COLLEGE YEARS*

Charles McArthur

When studying personality at an Ivy college, one soon learns to expect opposite outcomes according to whether the students who serve as experimental subjects attended public or private secondary schools. Time and time again, apparently chaotic data falls apart into two clean but opposite findings when the experiment is done within the public school group and within the private school group. The effects of this social parameter cuts across and overrides the effectiveness of almost every psychological parameter. After a while, one begins to doubt the generality of the allegedly general laws of psychology. One certainly begins to feel the real force that subcultures exert upon personality during the college years.

Of course public and private school graduates do not differ only in personality. They differ in all sorts of social traits, ranging from the color of their shoes while undergraduates (4.) to the career they will pursue after graduation (17.). An excellent description of the sociology of the private school is given by Baltzell (1.) in his fine book on Philadelphia Gentlemen. A more journalistic description can be found in The Status Seekers (27.): The public school world is sociologically less unitary and less often described but it seems likely that the public school graduates who matriculate at an Ivy college have lived in that special world often called "the American core culture (22, 23)." The sociological differences between the public and private school worlds is not the topic of this paper, however.

The purpose of this paper is to list again (15) and bring up to date the surprising number of personality variables that have been found, at Harvard and elsewhere, to relate to private and public school attendance. It is not postulated that the schools cause the personalities; what seems more likely is that the correlation between school and personaliy is mediated by self and social selection of certain types of persons for certain fates. Whatever the reason, the fact remains that this simple little "public-private" dichotomy excels all other psychological variables, including those constructs with claims both to fashionableness and sophistication, in that important property we call "relational fertility."

The list of variables that relate to public or private school attendance starts, of course, with college grades. Everyone has heard of "the Gentleman's C." Fewer realize how often and in how many colleges it has been shown that public school graduates outperform private school boys in college, (28, 3, 5, 8, 9) even when IQ is

* Revision of a paper read at the annual meeting of The American Psychological Association, September 1958.

held constant. This pattern survived even the upward shift in all college grades (31) brought about by the Depression. It even holds when the measure predicting scholastic aptitude includes previous grades (6). There is a twice-over phenomenon here: even when previous over or under achieving has been allowed for, public school boys overachieve again in college and private school boys yet again underachieve. It rather looks like a level of aspiration: these two groups of students find the same relative levels even when the absolute level of the task changes greatly.

It is entirely likely, at any rate, that the meaning of a particular IQ is different, according to the public or private background of the man who obtained it. We have some evidence that, with the same IQ being obtained by both men, the private school boy will have more intellectual range and power for his speed while the public school boy will have more speed for his range and power (19).

Given the same IQ, these men differ strikingly in the way they tackle problems, that is to say, in "cognitive style." The best way to watch a man's style of thinking is to give him an ink blot test (18). Here is the essay question to end all essay questions: "Tell me what you see in this inkblot, when we both know there is nothing really there." It is like certain final examinations that simply say, "Discuss." Under those conditions, the man has to draw on his own standards as to what makes a "good" answer.

Our public school boys most often give an ink blot performance that is long on quantity and accuracy (21). They give a lot of responses each one factually seen. Most private school boys give a performance that is long on quality. They don't give many responses, often as few as one to a blot. What they do is to elaborate and embroider that one response, working in all facets of the problem presented by the blot before they are willing to let the response stand. I suppose it could be said that these styles differ rather as the styles differ between equally able writers who contribtue to the *Journal of Consulting Psychology* and to the *Atlantic Monthly.*

Perhaps the most flattering score that can be given to an ink blot response is "M and C," by which it is meant that in one complex image the man being tested was able to use both the color of the blot and an imagined movement of the people he saw there. This feat begins to appear in the tests of people with IQs of 120 and becomes more and more frequent as we move up into the upper ranges of intelligence. Ordinarily, the presence of even one such response is taken as proof of great creative intelligence. However, at any given

IQ, the chances of getting one of these admirably complex responses is significantly better if the man being tested attended private school (21)! However, before we decide, once and for all, that private school thought is "better," we had best add that the use of color in the responses of private school students is sometimes of a sort (scored CF) that suggests impulsiveness that is not yet very maturely worked through. I don't believe we can say which style is "better." They differ.

Non-intellectual tests also differ. The same score on Need Achievement, whether measured by McClelland or by the Thematic Apperception Test, does not have the same meaning for our two groups. Need Achievement predicts the public school graduates' college grades; it does not predict the grades of private schoolers (13).

Identical interest test scores have been found to have different meanings for post-college careers. Eighteen year follow-up on the Strong Vocational Interest Blank showed that it predicted beautifully the public school careers but predicted very little about the future of the private schoolers (14, 17). An excellent way to predict for them turned out to be to ask them, while in college, what they were going to be doing twenty years later!

Item analysis (21.) of the Strong has suggested that public school boys choose clusters of items having to do with success and science, while private school boys choose clusters of social, aesthetic, statusful, and romantic outdoor activity items. It was as though these young men had read Parsons on ascribed vs. achieved status and then filled out their Strongs accordingly.

Perhaps these results answer one urgent manpower riddle: why are there so few private school scientists? It is a matter of values. That is too bad. We talk so much of rescuing science potential among unrecognized geniuses in the Cumberland Mountains or on the New York West Side. It is too bad we can't rescue a few of the thousands of young men who every year come to good universities with excellent private school training in physics and with College Board scores suggesting real talent for mathematics only to announce that they are going to major in Classics! Probably by the time these students reach the university we are already too late.

There are other values on which public and private school groups differ. One of the most sophisticated longitudinal studies of the changes of values during the four college years is being conducted by William Perry. One small item in his study was a freshman test of "authoritarianism." Of the fifteen lowest scores, fifteen were from public schools.

Of the fifteen highest scores, twelve were from private The middle range would be worth exploring.

Public-private differences also go deeper than values. Our Bernreuter tests show differences in personality and our Rorschachs contain much more than mere differences in cognitive style (21.). Briefly, we found what Spinley found in England: considerable emotional constriction of upper class men. (30.) Besides that, we have twice shown major differences in the Thematic Apperception Tests of these men, differences that suggest totally different motives mediated by totally different childhood experiences. (13, 16)

These differences fit the opinions of social anthropologists about differences between subcultures within the United States and fit especially neatly Florence Kluckhohn's theoretical description of several value systems that are quite unlike each other but are all to be found within American society. (11, 12) Her image of a system of Doing and Future oriented values fits very well the private school data from all sources. One research just now needed is the development of a set of scales that would qualify Kluckhohn's variables. Several people have tried but met no success. An aphorisms test in progress might do the trick.

Next to the private-public dichotomy, the next most relationally fertile variable in psychology is the number of cigarettes a man smokes each day. Of course, the two most relationally fertile variables have been found to relate to each other. Nonsmoking is a middle class phenomenon. For example, while in college, our Harvard groups showed a steady progression such that: "20 per cent of the graduates of very exclusive private schools do not smoke, 30 per cent of the graduates of less exclusive private schools, and 40 per cent of the graduates of public schools." (20, 68) When the effect of dormitory living is cancelled out of this trend, there is still significant variance to be explained in terms of subcultures and differing subcultural value systems. Similar relations hold at least one other college.

These differences, as we examined them in more and more detail, began to make sense in terms of history. We found evidence that: "Convergent theories of anthropologists, sociologists, and psychologists . . . all suggest that the use of tobacco . . . might 'arouse strong counter-anxiety' in upwardly mobile members of America's lower middle class . . . Their attitude . . . would, presumably, be a corollary of a basic value system that these people hold in contrast to most of contemporary society.

"The source of this value system is described by Weber as the Protestant Ethic. It is a work morality, emphasizing the Devil's stake in idleness and self-indulgence. It is an ethic that abhors as Sin the

wasting of one's substance in unprofitable trivia, since such waste, in the (16th Century) Protestant dogmas, was evidence that a man had not been vouchsafed Grace. . . . This theology of 'provident purposes' was . . . secularized (the 18th Century) in the form of 'wordly asceticism,' as Weber illustrates from the diaries of Benjamin Franklin. . . . These values are now (in the 20th Century) being replaced in our society, according to the sociologists. They have become the property, though perhaps not exclusively, of the 'Old Middle Class.' . . . Yet it is these values that have generated what Mead calls 'the American core culture.' " The lower middle class public school focus of nonsmoking seems in all these ways over-determined.

And so may also be over-determined the public school focus on Need Achievement and all the other variables, superficial and deep, that distinguish the public school from the private school personality. The apparently simple little dichotomy between private and public school graduation may have led us to an appreciation of the "interacting forces from theology, history, sociology, anthropology and psychology that impinge upon and, indeed, culminate in the personality" of one young man who is a public or private school graduate.

The most recent public-private study was done by Drs. Albert Caron and Michael Wallach (2.). In passing, they found many differences that cross-validate the earlier studies we have mentioned. For instance, their factor of "Perseverance for Achievement" was — as expected — a public school trait.

The main focus of their study was on the laws of memory. Zeigarnik set off a lot of psychological experiments by announcing that people recalled best those tasks they had failed to complete during a test period. Other studies came out the opposite way: people repressed the memory of their failures and recalled their successes. A tangled literature has grown up concerning what sorts of people recall which way. Caron and Wallach ran a master experiment, varying all the factors that were suspected of affecting memory of tasks. It is a good study, apart from the bits that bear quoting here and does much to clarify the issue to which it is addressed.

From all we knew, it seemed likely that public school boys would make Zeigarnik recallers and that private school boys' recall would be repressive. And so they were. Factor analysis even suggested that the public-private dichotomy should be weighted very heavily. In the raw data, the single variable of public vs. private school was more strongly associated with recall direction than any of the many variables or even any combination of the many variables used in the experiment. In fact, the relationship was so pronounced that Caron at one point used the public and private criterion as a means of getting prede-

termined groups of people who were "naturally" inclined to recall or repress failures.

If these social types differ not only in the color of their shoes but also in attitudes and values and intellectual styles and personalities and even (as is also true in some of our data) in the infant training they received, need we be surprised that they obey different laws of memory? It makes one speculate. Can we suppose their laws of learning are different, too? Maybe we should rerun all our psychological "laws" to see if they can stand up in a private school population!

How should we interpret these striking findings? Certainly we do not think that the schools brought about all these personality traits. The facts themselves show that some differences between these groups existed before they attended any school. Nor is this school dichotomy the only social variable that could be used to separate personality types. The author has elsewhere reviewed such alternate indices as social class, career pattern and value orientation that correlate to some degree with the school variable. (15.) The school variable remains the most fertile index.

Perhaps the reason for its fertility is that families select themselves for labelling in the public or the private category; these categories are facts in social reality, not armchair creations. Perhaps the key observation is that school pulls more strongly than social class. School is an index of sub-culture; perhaps personalities differ not so much because of social class but more because of sub-culture. The private school personality does not mark all people of high status. It is specific to the members or imitators of that urban aristocracy which, as Mills has pointed out, is only one of our current elites (26.). The influence of Groton School values brings together in one meaningful category all Protestant members of the upper-upper class and some members of the upper-middle, totally overleaping the lower-upper stratum.

Perhaps one reason sub-cultures are more potent than social classes is that sub-cultures are homogenous enough to create child-rearing practices and other institutional arrangements—like prep schools—that homogenize personalities, while social classes are so diffuse that they cannot arrange the means to homogenize the personalities of their members. For the sub-culture, but not for the social class, one might invoke Kardiner's model of the congruences between persons and institutions that generate and perpetuate an ongoing "institutions — personality — institutions — personality" cycle between each historical generation (10.). Such a closed system model fits the private school world, which has been described as an "enclave." (22.) The "American core culture" from which most high school graduates who attend good colleges are drawn, is usually described by anthropologists

as possessing a similar self-perpetuating homogeneity. Presumably this sub-culture is more nearly identical with one social class, though recent writers tend to distinguish many subtypes of middle class and argue for the emergent evolution of at least one subtype very unlike the old-fashioned group this paper describes. (24, 25, 29) It may be that the public school subculture described here draws most from the "old middle class" and from lower-middle class boys who are upwardly mobile.

Whatever the practical interest in these findings may be and whatever the explanation they may seem to offer as to certain well trained individuals not only do not enter but are actively hostile to science in a time when science matters terribly may have very practical implivations, indeed — their real interest may lie in the possibility of studying ready-to-hand phenomena relevant to theories of culture and personality. With a little purifying of the experimental groups and with the development of an instrument to measure the relevant value orientations, one could design an experiment to test psychology's ideas about enculturation and introjection as major sources of adult personality. It would be fascinating to investigate via a two by two design the factors of "infancy spent in the sort of family that sends its children to private school," "infancy spent in the sort of family that sends its children to public school," "private school attendance" and "public school attendance." How much private school personality is acquired by boys from public school types of homes who, probably ill-advisedly, take one of the numerous scholarships now being offered to prep schools? Of course insofar as ours is a more stable society than we like to think, it will probably continue to be true that such scholarships are given to sons of good families who have fallen into financial misfortune but have retained fringe participation in the urban aristocratic culture. Yet some test cases might be found. How much does aristocratic infant training and continued upper-class enculturation wear off under the impact of a public high school when, through rare historical accident or perhaps misguided idealism, a boy goes or is sent to such an institution? The critical cases will be rare but may exist. A fascinating and theoretically interesting study could be made on the old California families (as contrasted to *nouveaux riches*) who apparently do send some boys to public highs.

The possible findings of a general study of the interactions between family and school are that home outweighs school or that school outweighs home or that each is peculiarly effective in certain areas or that the relative weights of these two forces cannot be examined because the two are never incongruent. The last is the writer's prediction. When a boy is sent to an apparently inappropriate school, it seems likely that the home was already maverick. Ellis (at Stanford)

has found that lower class boys who are different enough to have gone to college had already changed their reference group when in high school. In the Study of Adult Development (21.) we further see that such youth's parents had themselves made the necessary reference group change. In a similar way mobility into private secondary school may result from a change in the parents, who have already begun to generate for their offspring a private school type of home. This process is probably attended by all the fumblings and errors that attend lower class mobility into white collar respectability, yet for the child the enculturation process may be far more continuous than is usually assumed. All this bears examining.

It is also possible that our society shows more historical continuity than it is usual or approved to assume. The empirical question should be examined as to whether these sub-cultures roll on from generation to generation, as Kardiner's model proposes, or whether they are even now crumbling, as the most modern sociological opinions would have us believe.

In the end, such studies might lead psychologists to recognize the middle class boundness of their perspective. Apparently, measured variance in personalities can in the first instance and in the largest part be explained by the person's sub-culture. Not only do members of American sub-cultures have different traits but different psychodynamics underlie these traits. Not only do they have different memories but they obey different laws of memory. Not only do they have different learnings but these may have been acquired by means of different laws of learning. All of these sub-cultural effects on personality show up within and between college student populations. The social psychology of higher education affords us many opportunities to study culture and personality theory. It is not necessary to go to Bali to improve one's cross-cultural perspective.

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NON-INTELLECTIVE QUALITIES AND THE PERCEPTION OF THE IDEAL STUDENT BY COLLEGE FACULTY*

Donald R. Brown

In many discussions of the value of a liberal arts education, one is reminded of Mark Twain's farmer who when asked if he believed in baptism replied, "Believe in it? Why I've seen it done!" This acceptance on faith has, it must be admitted, brought higher education a long way but it has also allowed educational resources to be channeled in a most pluralistic manner and the term liberal arts itself has been used to cover a puzzling array of educational endeavors.

With the current population pressures and sky rocketing costs, it is unlikely that we can afford to operate on faith and vagueness any longer if we want to preserve the very best in American education, increase its availability, and indeed, improve it.

How can one best proceed in the task of defining what we educators so firmly believe in? One approach which suggested itself to us as psychologists studying the total educational process at a women's liberal arts college was to approach the problem empirically and attempt to determine what qualities beyond grades were characteristic of students whom the faculty selected as ideal students. Our longitudinal and cross sectional studies of the basic personality development during the college years provided a rich source of data which could be supplemented by the official records of the College. We were, of course, guided in our approach by the assumption that academic achievement and the successful attainment of a liberal education was a broadening experience which was inseparable from the total maturing of the personality; a process on which we had collected a good deal of information.

The task then, was one of clearly stating criteria of academic goals which we would define by the study of faculty choices of ideal performance.

Before lightly dismissing the classical intellective criteria of academic success, grades and achievement scores, let me present the need which exists for more differentiated criteria associated with the suc-

* The study described was conducted while the author was on sabbatical leave from Bryn Mawr College. It was a part of the ongoing research program at the Mary Conover Mellon Foundation at Vassar College and was supported by a grant from the College Entrance Examination Board. An earlier version of this paper was presented at the annual meeting of the American Psychological Association, September 1958.

cessful attainment of a liberal arts education. It is obvious that a certain level of intellectual capacity is required for college success but above that minimal level there is a wide range of actual college performances. that are considered successful. The experience of many colleges which select students partly by scores on the College Board examinations indicate an increasing ability to predict, and thus avoid, failures but, conversely, an increasing inability to predict the relative grade performance of those selected. Therefore the need for more differentiated predictors which are contingent with intellectual capacity arises as a practical requirement.

However, as important as the prediction problem is from the practical standpoint, the maximizing of student performance and capacity (through understanding of the basic developmental and motivational trends in the individual student as he interacts with the college environment) is by far the more important long range goal of the educator.

A few additional comments on the inadequacy of intellectual predictors as such are in order. Not only do they not throw light on the motivational problem, except insofar as the intellectual development at the time of testing is contingent on the proper motivational development, but they are not causally related to growth and development. We have been struck by the fact, obvious enough in itself but frequently not recognized by virtue of its being so common, that grades might be obtained in quite different ways. For example, in the one instance by a brilliant, independent, versatile, flexible thinker, and in another by a persistent, well-disciplined, well-organized and obedient student with a good memory.

With the generally stated goals of higher education in mind, we might argue that what we want is to foster independence, versatility, and brilliance, rewarding their attainment and conceive of them as criteria. The argument for such criteria as these is not only that one might be more successful in developing empirical predictors of them than in predicting something as un-differentiated as grades in general but that, as pointed out above, such criteria might actually be of greater significance. Thus, a previous study reported in *The Journal of Social Issues,*[1] which was carried out on a group of alumnae 20-25 years out of college, showed that high grades obtained by women who were career-oriented in college had quite different determinants, as well as implications for the future, than did high grades obtained by women

[1] Vol. XII. No. 4, 1956. "Some Educational Patterns" by Donald R. Brown, p. 44.

who were oriented toward highly conformist roles. The same differential predictions could be made for women with low grades of these differing orientations. Indeed, a group of underachievers who were not career-oriented but who were low on authoritarian ideology and social peer group integration appeared to have gotten more out of the college experience and grown further in intellectual spheres than a group of high graded non-career oriented but conformist type women. These findings have been corroborated by a four-year study of eighty current students chosen at random from the class of 1958.

The college is interested in diverse areas of the student's development which are not indicated by academic performance as such. According to the stated aims of most colleges interest goes beyond imparting knowledge and developing skills to such qualities as curiosity, responsibility, tolerance, flexibility, independence, openness to new experience, and so on.

One last criticism of grades has to do with the well documented fact of differing rates of maturing amongst college students as measured by such scales as the Vassar Developmental Scale.[2] These rates of maturing are not highly correlated with grades nor are they related to the Scholastic Aptitude Scores of the CEEB tests. Yet, as we shall see, they are related to faculty perceptions of ideal students and in themselves substitute at the upper end a description of students which closely parallels the stated aims of college educators.

Having dismissed graded performances as an adequate criterion, where do we turn? We have explored various paths ranging from R. W. White's[3] notions regarding the stabilization of ego identity, the deepening of interests, the humanizing of values and the freeing of personal relationships as major growth trends as seen in our four-year interview study of the class of 1958, to securing empirical predictors of faculty nomination. Let us turn to the specific study at hand.

Design of the Study:
The Criterion:

The approach to setting the criterion for this study was frankly exploratory. It was felt that without claiming any absolute validity for faculty judgments of individual students that it might be argued that faculty judgments nonetheless have special relevance in an educational institution.

In order to provide as complete a specification of the criterion

[2] *Research Manual for the V.C. Attitude Inventory,* 1957, Mellon Foundation, Vassar College, Poughkeepsie, N. Y.

[3] *Lives in Progress.* New York: Dryden, 1952.

group as possible without prejudicing the judgment of the faculty or making the task too difficult to get cooperation, the following request was sent to all members of the faculty from the admissions office:

> "Since in our opinion, the best judges of successful college performance are the teaching faculty, we would like the teachers to nominate a group of superior students whose records will be studied. We would like to ask each of you to give us the names of any students in the class of '57 who, on the basis of advanced (Grade 3) work done with you, seem to belong to such a group. We are not attempting to define the criteria for selection, realizing there are different kinds of excellence among students whose development and achievement during their four years of college were such as to make their teachers think of each, "She is the kind of young woman we want at Vassar."
>
> Obviously, if we were interested in grades alone we could select our group from available records. While we would expect most of the students nominated to have done generally superior work in college, it is possible that some have been outstanding in one field and would be overlooked if we relied on the credit ratio as the basis for selection.
>
> Although we are not asking for any definition of general criteria for nominations, if possible we should like to know the basis for specific selections. Therefore, we would like you to indicate briefly, next to each student's name, why you think she should be included in this study.
>
> If none of the members of 1957 who took advanced work with you seem to have been of the caliber that we are trying to identify please return the nomination sheets with a statement to that effect."

This request resulted in the nomination of 67 members of the Class of 1957 from a total of 310 (21.6%). Each name was accompanied by a statement of varying detail explaining the basis of nomination by a faculty member.

The nominated group was then classified by whether the nominee had achieved a four-year cumulative credit ratio of above or below 3 (3 corresponding to an A-average). 57% were above 3, and 43% below, the lowest being 2.4.

In order to determine what differentiated the various types of college achievement as seen by the faculty versus college grades re-

ceived, all students in the class with credit ratios of 3 or above, but not nominated, were also included, as well as a random sample of non-nominees with credit ratios below 3. The former number 45 and the latter 41. There were no faculty statements on these people.

For cross validational purposes a similar procedure was later followed on the Class of 1958, and 21.3% of the class were nominated with approximately the same proportions of above and below 3 credit ratios.

In addition to giving the names of "ideal" students, the faculty were asked to give the qualities which the nominees possessed which led to their nomination. These statements varied from a few descriptive adjectives to detailed statements of one or two pages. In order to analyze these data a content analysis was performed using the following fifteen categories listed in order of fresuency with which they were mentioned. The actual frequency is given as per cent after each category.

1. *Cognitive Intelligence:* brilliant, quick grasp of concepts, superior intellect, etc. 22.2%
2. *Directed Intellectual Curiosity:* wide range of interests, goes beyond assignments, alert, enthusiastic, directed orientation, etc. 17.7%.
3. *General Likability:* pleasant, modest, cooperative, helpful, etc. 9.7%.
4. *Growth During College:* shows high level of maturity as compared to freshman year, marked progress in work, etc. 7.8%.
5. *Independence:* self-directed, works by self, etc. 6.6%.
6. *Specific Skills:* writes well, talks well, good laboratory technique, etc. 5.4%.
7. *Integration:* well-organized, retains and utilizes material from diverse sources, sees relationship within field, integrates subject with other fields, etc. 4.9%.
8. *Penetration:* goes beneath surface, depth of understanding, etc. 4.8%.
9. *Analytic:* shows critical judgment, etc. 4.8%
10. *Moral Responsibility:* good citizenship, leadership, etc. 4.8%.
11. *Originality:* creative etc. 3.7%.
12. *Flexibility:* openmindedness, tolerance, respect for facts, profits from criticism, etc. 2.2%.
13. *Promise for Future:* make a good scholar in the field, etc. 2.0%.

14. *Aesthetic Appreciation:* sensitive to beauty, appreciates art, etc. 1.7%.
15. *Intellectual Integrity:* honest, forthright etc. 1.7%.

If one combines the total responses in categories 1 and 2 (Cognitive Intelligence and Directed Intellectual Curiosity), forty per cent of the total responses are accounted for by this almost pure intellectual factor. It is interesting, none the less, that such personality factors as "General Likability" and "Growth During College" are third and fourth in frequency followed by a general integrative-analytic factor which accounts for about fifteen per cent.

Thus, by their own statements, faculty see "ideal" students as having a high degree of intellectual power which is directed toward objects of intellectual interest in an independent manner and disciplined along integrative, penetrating and analytic lines. It is important, however, that the cognitive-intellectual aspects of the students' development not be one-sided so that qualities of friendliness, helpfulness, and cooperativeness not be lost nor the moral implications of one's intelligence be slighted.

A student, of course, need not possess all of these qualities to be seen as ideal. An unusual amount of originality, flexibility, or the possession of a highly developed skill relevant to college performance will often compensate for other lacks. Furthermore, the faculty is appreciative of marked growth along intellectual and personality lines during college and interprets such growth in an honorific way. When one reads the kinds of growth mentioned in the nomination statements, one is struck by the similarity to the kinds of normal developmental changes felt to be desirable in late adolescence and earlier adulthood by psychologists. Such trends are deepening and broadening of interests, the humanizing of values, the stabilizing of the ego functions, loosening of purely defensive mechanisms, etc., are frequently alluded to.

It appears then, that the faculty admires high level ability but prefers to find it housed in a well integrated, developing, pleasant, purposeful young person. Nor are they overly influenced by performance as indicated by grades alone. The distribution of grades referred to above indicates that, while a student must be in the top half of her class to be nominated, she need not be a "straight A" person. Indeed, in some instances students with Junior Phi Beta Kappa status were given negative nominations although these were not requested, indicating that the grades achieved were by techniques of manipulation,

over-conformity, and brute effort without any saving grace or real intellectual interest.

The Variables:

Having chosen the four criterion groups for the classes of 1957 and 1958, our attention now turns to the thirty-three quantified variables and the item analysis of the Vassar test battery of our subjects. These data were available before the subjects were chosen for the study as a result of the ongoing Mellon Research Program. All members of the two classes had taken the total Mellon Test Battery in both their freshman and senior years which constitutes eighteen of the variables as test scores. Six of the variables are the freshman and senior year scores on three factors which were found to account for most of the variance in the Vassar scales by Dr. Harold Webster.[4]

In addition to these twenty-four variables, nine measures were taken from the college records and included. These were:

1. Type of high school—private or public.
2. Number of schools attended.
3. Admission group—rating given in the Vassar Admission Committee when the applications are considered. Essentially, it amounts to a quartile rating with 1 as high.
4. SAT Verbal.
5. SAT Mathematical.
6. CEEB English Achievement.
7. Sum of the two CEEB Achievements offered.
8. Rank in secondary school equated for size.
9. Senior Credit Ratio.

RESULTS

Having selected the subjects and gotten descriptions of those nominated as seen by the faculty, we can now turn to our analysis of the test data and compare how each of the four criterion groups relate one to the other on these independent measures.[5]

As to be expected, the grade point ratio holds up as the most efficient predictor of faculty nominations. However, as indicated above, the nominees covered a wide range of grades and from the descriptions provided by the faculty it is obvious that other non-intellective factors

[4] For description of the variables and the factor analysis see footnote No. 4.

[5] A complete description of all of the technical operations, including the discriminant function analysis, item analysis of the test battery, and T-test analyses is included in Brown, D. R. *Non-Intellective Factors and Faculty Nominations of Ideal Students: A Report to the College Entrance Board,* Mellon Foundation, Vassar College, Poughkeepsie, N. Y.

played an important role in being seen as ideal and no doubt in achieving high grades. For example, during both the Senior and Freshman years, the general sequence of mean scores was almost invariably such that the nominated but below 3 credit ratio students had the most honorific scores. That is, they were seen as the most mature, confident, open to new experience, tolerant, able to express and tolerate impulse, showing great growth during college, being high on masculine interest, and low on the Berkeley F-scale and ethnocentrism.

The nominated above 3 credit ratio groups had the next highest scores on these variables. While the non-nominated high graded people and the non-nominated low graded people follow in that order.

It is interesting to look at the comparison of nominated and non-nominated above 3 students which shows that a student who is nominated versus one who is not is apt to come from a public school, have a higher Senior Credit Ratio, be low on maturity and confident suppression, high on dominance and self-confidence as a freshman, and show a decreasing degree of repression-suppression.

In contrast to these above three people the below 3 students who were nominated show a somewhat different picture. In addition to higher grades than the non-nonimated, we find again a high dominance and self confidence but also a high impulse expression score which implies that faculty favor a certain amount of unrestraint and expressivity of impulse in students who are not able to achieve top grades in the system. Also, the nominated people are higher on impulse expression, lower on F and E, higher in social maturity, and have a factor pattern which would indicate a personality more tactful about describing self and others, more perceptive, aware of strong impulses, more introceptive, less authoritatian, more realistic, and more mature than their non-nominated peers and for that matter than their nominated above 3 peers.

Comparing nominated groups with non-nominated groups, above and below 3 people combined, we find that the faculty nominates people who have a good credit ratio, who are high on admission criteria but not necessarily top candidates, who have high social maturity, who show a moderate amount of impulse-expression, who are low on measures of repression and suppression, who achieve high developmental status as seniors, who are low on conformity and integration into the student peer culture, who have adequate self confidence, who are mildly dominating, who tend toward masculine interests, and are low on authoritarian tendencies both personally and on socio-political issues.

The descriptions arrived at by the use of personality scales taken

independently of the selection of the nominees throws considerable light on the kinds of personality and social functioning which appeals to the faculty and could therefore be taken as a further specification of the implicit goals of a liberal arts education.

It is of interest to mention one further source of data gotten from self descriptions of the subjects. From a cross validated item analysis of our total 677 item battery, it is clear that the nominated students differed from the non-nominated in the Freshman as well as in the Senior year. For example, in the Freshman year before college had started, the nominated subjects gave descriptions showing less conventional social role perceptions, more introception, more masculinity, more civic-minded interests, and a less hysterically repressive type of defensive structure. In the Senior year the items remaining after cross validation gave much reinforcement to the denial of conventional social relations and conventional women's role prescriptions by these nominees. Also, there is a hypochondriacal trend running through the items which is probably more a reflection of frank admission of difficulties and lack of conventional suppression than actual exaggeration of symptoms or somaticizing. Other trends include a definite tolerance of ambiguity and acceptance of the theoretical and abstract as worthwhile. The civic-minded and somewhat liberal civil liberties type orientation with an appreciation of the dignity of the individual reflects itself as well although the personal orientation is often on the introverted, introspecting and introceptive sides. Combined with these social attitudes there is evident less dependence on supernatural-mystical events and false optimism but this is not accompanied by cynicism or paranoid tendencies. Rather, there appears a sense of inner direction and tempered confidence and a strong sense of morality. In the realm of family there is a wish for greater freedom and a frank criticalness of parents without strong guilt feelings and accompanied by social responsibility. There also is evident a sense of adventure but in a morally responsible manner rather than an impulsive acting out.

The overall impression gotten from these self-descriptions, then, is quite frankly a favorable one for nominees as against non-nominees. Whether these personal qualities are conductive to high performance or are a result of the confidence that comes from being admired by the faculty cannot be answered from these data but it is not hard to see what the faculty found to their liking.

The senior results give a start in the construction of a scale for predicting faculty nominations as well as some insights into the qualities that result in such nomination. It is planned to pursue these data further.

Again one is struck by the similarity of these findings in regard

to the ability to seriously profit from the wares of the college on the part of some students and our alumnae study findings referred to earlier. It appears that basic personality orientations present before college are extremely important. One wonders what part the role of self selection by the applicants to various colleges has played in the productivity of those colleges.

CONCLUSIONS

The study seems to indicate that the students seen by faculty as ideal products of a liberal arts program have several consistent traits. These traits agree well with what we have accepted on faith as the value of liberal arts programs and indicate that, in spite of the difficulty in verbalizing these goals, faculty are quite capable of recognizing these qualities in students and even in specifying what they are in reference to particular students. One is also struck with how closely the pattern of traits seen as ideal by the faculty approximate the types of descriptions given by personality theorists to concepts such as maturity. It is tempting to suggest that in addition to indicating a certain mastery of a content area, the M.S. might also often be read as "Master of Self."

Research of this sort is bound to raise many important questions regarding educational policy. Foremost amongst them is the possible use of non-intellective or motivational measures as selection devices for college admissions. It seems to the present writer that a hasty step in that direction would be very unwise for the following reasons: First of all, the findings are too tentative to be practically useful as predictors. Secondly, to select people on non-intellective grounds rather than on measures thought to relate to potential intellectual capacity would not only be anti-intellectual but would be tantamount to refusing to face the challenge of maximizing the development of each student capable of being developed. Thirdly, such predictors would have to be worked out for each college in terms of the environmental presses operating in that college to be more efficient than present intellective and performance predictors. Rather it would seem desirable to continue research of the kind that would help us as educators to structure our curricula and teaching methods in ways best suited to develop our students along lines compatible with our goals and the goals of society in supporting higher education. This can best be done by a thorough knowledge of the developmental processes taking place in students intellectually and emotionally and the dynamics of such processes as they interact in the cultural milieu of the institution.

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DIVERSITY IN COLLEGE STUDENT CHARACTERISTICS*

Paul Heist

Through the past decade when critiques of American education have come forth from numerous groups in this society, a chief defense, both for explaining some of the "ills" and for justifying the system as it exists, has centered in the philosophy of "education for all." When compared to the educational program of England, Russia and countries on the European continent, we have attempted to understand our weaknesses by pointing to the greater numbers at all levels of ability who have secondary and higher education made available to them. Implied in and underlying the defense of the American way is, of course, the assumption that varieties of programs and procedures effectively accommodate the existing differences among students. This is perhaps an unwarranted assumption, and some have suggested that inadequate diversity of program for the heterogeneity of the student population is a major problem of education.

The attention given to the questions "who goes to college and who should go?" and "how selective should specific institutions become?" has resulted in more speculation than fact. The criteria for best solutions are more or less philosophical and do not readily lend themselves to factual answers, especially when seeking answers within the limited time period of one or two decades. But, with continued professed concern for the individual in our changing society and with growing needs for more education, investigations of the functional and important differences among students and institutions become increasingly essential. In this paper we raise a few questions and review some pertinent data only on extent and type of differences among students. An interest in diversity at some levels of schooling has a long history in American Education. Much attention and study have been concentrated on all kinds of exceptional children in the elementary school years, and an increasing emphasis is being given to the education of the talented and superior in both the elementary and secondary schools. Though less concern has been manifested generally at the college level for heterogenous student populations and appropriate differentiation of program, interest in the diversity among students and among institutions (structure, objectives and program) has never been at a higher level. This intensity of interest is, of course, in line with the fact that the greatest diversity in education exists in the complexity and hodge-podge known as American higher education.

At the Center for the Study of Higher Education in Berkeley, a number of studies currently under way are in part concerned with the

* Revision of a paper presented at the annual meeting of the American Psychological Association, September, 1958.

extent of diversity in higher education, both among institutions and among students.[1] At this stage of the research a variety of data are available which might be used as illustrative evidence of the extent and kinds of diversity. Only some of these will be utilized in a fairly brief exploration of the question of heterogeneity of college students in certain segments of higher education. Reconfirmation of the great variation among students and student groups is obtained by resorting to two different types of measurements. The chief sources of information are two separate projects. One of these consists of a study of the selectivity of U. S. colleges and universities at the point of intake; these data, in the form of total scores on the American Council of Education Psychological Exam (ACE), were obtained from a stratified, representative sample of the more than 1,850 institutions in American higher education.[2] Most of the remaining data are taken from a project conducted in cooperation with the National Merit Scholarship Corporation; the people in this sample are winners of the National Merit Scholarships (NMS) and of Certificates of Merit (near-winners; 10 per cent sample) of the first year of the program, 1956. Some additional facts have been taken from two other projects presently under way at the Center.[3]

This paper examines the data in light of the following questions: What diversity of measured academic ability exists in the variety of institutions representing American higher education? What diversity exists among some college and university students in non-intellectual factors, especially factors related to scholarly pursuit and achievements? What are some general implications that follow from the reported data?

Differences in Academic Ability

Variations in scholastic atpitude are presented in Figures I and II. Most of the statistics are taken from the "selectivity study" of higher education referred to above. Figure I presents the mean and standard

[1] The research has been supported by a grant from the Carnegie Foundation. Collection and analysis of the data utilized here have involved the efforts and contributions of Dr. T. R. McConnell, Chairman of the Center for the Study of Higher Education, Berkeley, and Drs. John Darley and Elwin Farwell, staff consultants, plus the cooperation of several research assistants of the Center and administrative staff in numerous colleges and universities.

[2] Darley, John *et al*, Unpublished report, Center for the Study of Higher Education, University of California, Berkeley.

[3] Data on ability scores of medical students were obtained through the cooperation of Dr. Helen H. Gee, Director of Research, Association of American Medical Colleges.

deviation scores for entering freshmen of 1952 on the ACE (1952 edition) for two sets of institutions: (1) eight with a relatively limited range of ability, which are represented by the two clusters of four, diagrammed near the top and bottom, and (2) four wih a wide range of ability. The distribution graphed at the bottom of the figure, with a mean of 104.4 and a standard deviation of 27.1, represents the scores of all individuals included in this sample of American higher education.

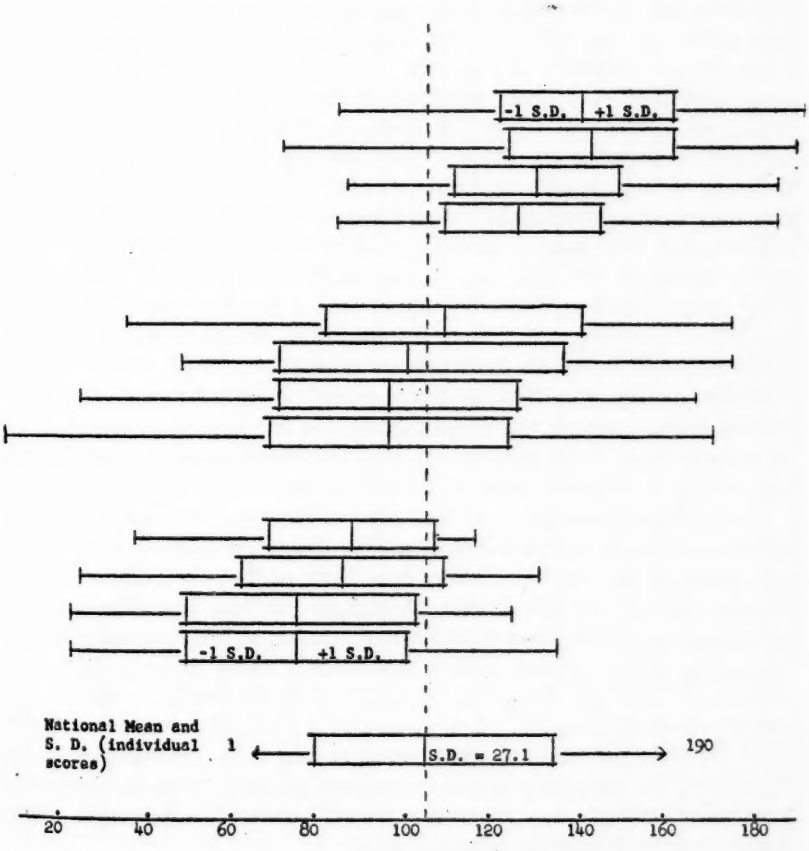

FIGURE I. ACE Means and Standard Deviations of Entering Freshmen in Selected Institutions from a National Sample of American Colleges and Universities - (Fall of 1952)

These twelve schools, all four-year institutions, were selected to illustrate varying ranges of abilities *within* institutions and variation of mean scores *among* them. One will note that institutions with relatively limited ranges of ability exist at both upper and lower levels of ability, clusters *a* and *c*.

The four institutions at the top of the chart include one complex university, two four-year liberal arts colleges, and one four-year public urban institution. A rather high order of selectivity is indicated for these four by the mean scores, averaging over one standard deviation above the national average, and rather limited heterogeneity or diversity of student body at this level of superior ability may be concluded from the small standard deviation values. (One standard deviation, above and below the mean, is diagramatically represented for each institution by the portion enclosed by the rectangle. This distance of a standard deviation on both sides of the mean includes the scores of approximately two-thirds of the groups in these distributions.) But general selectivity of student body does not necessarily correlate with high mean scores since there are some institutions with mean scores at this level which have a standard deviation score equivalent to or greater than the standard deviation (27.1) of all college students. As the four schools at the bottom of the chart will indicate, one can also find limited diversity or limited ranges of ability *within* schools where the overall calibre of the student body is comparatively low. These institutions with low mean scores are all liberal arts colleges, none of which is located in the South or West.

Looking comparatively at clusters *a* and *c* it might be noted that no score in the total distributions of any of these low schools falls above the mean of the top two institutions. One might also point out that 84 per cent of the distribution of each of the four low schools does not overlap with 84 per cent of the distribution of the four top schools. Generally unlike student bodies here would seem to be a fair conclusion, at least on the ability variable, and one might be motivated to ask whether diversity of programs and curricula to accommodate such *different* groups of students exists among these institutions. More than likely the programs and instructional approach could be described as similar, though few educators would venture to state that these varied groups should be educated alike.

The four schools in the middle of Figure I, again all liberal arts colleges, were selected to illustrate the greatest variability in ability *within* single institutions. Most schools in the national sample of higher education having the largest standard deviations tended to cluster around the national mean. Such extended distributions within single

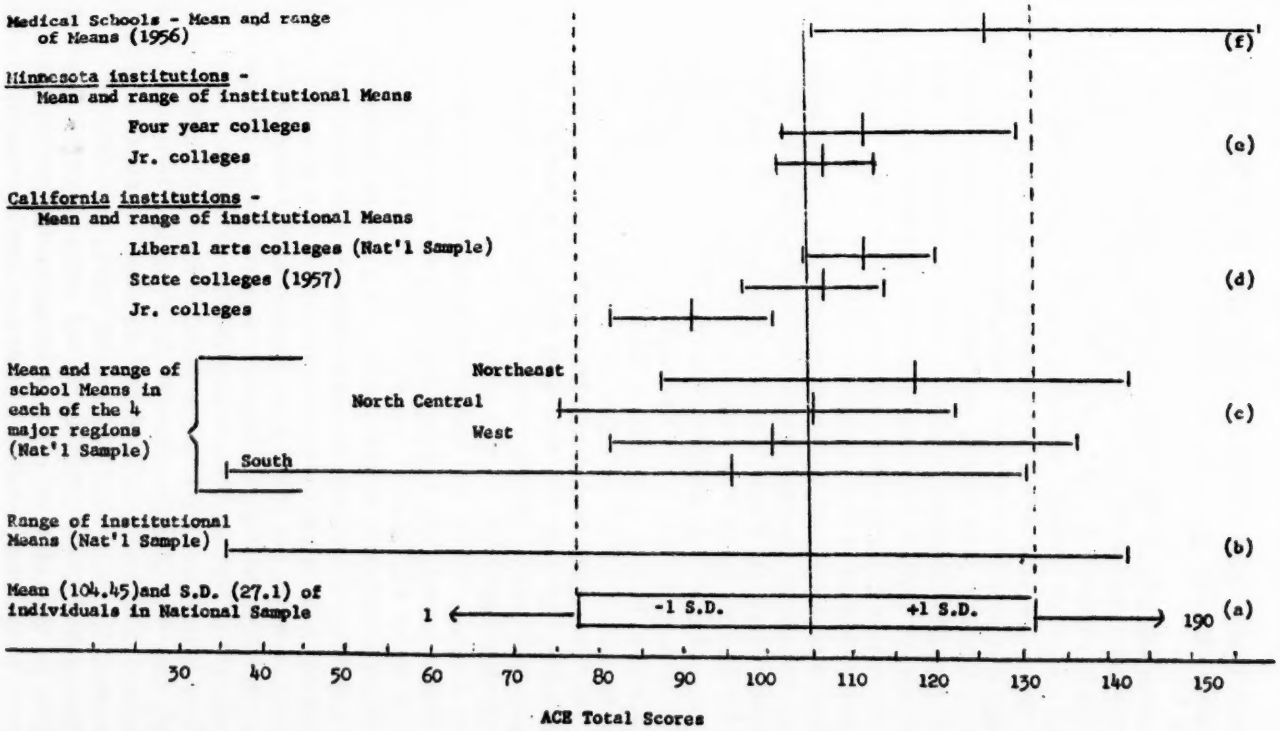

FIGURE II. Diversity in Scholastic Aptitude for Entering Freshmen Illustrated through ACE Total Mean Scores (1952 edition) for Institutions within Some Major Sub-classifications in Higher Education (Fall of 1952)

institutions mean that students ranging over 40 to 50 I.Q. points often sit in the same classrooms and attempt to learn the same subject matter.

One wonders about the implications that might be drawn for a possibly more diversified system of higher education, that is to say, diversified in objectives and function. Awareness of such differences in total groups of students among colleges and universities perhaps raises many questions rather than leading to any concrete answers. To suggest one or two examples: does anyone know what it means for the education, development and future of a person of average abilitity if he should attend a college in cluster *c* rather than cluster *a*, or vice versa? Does the variation between such student groups and the student peer cultures serve as a major factor in the challenge to and the attainments of the individual?

Diversity among educational institutions, when viewing institutions within a number of sub-classification, is also presented via ACE total scores in Figure II. Numerous other taxonomic sub-classifications (e.g., by level or by type of control for all undergraduate schools) could be used as well to depict the existing differences. The figure is read most meaningfully from the bottom up. The total range of *mean scores* of entering freshmen in American institutions, all classified as institutions of higher education, extends approximately from 36 to 143 (the distribution second from the bottom in the figure and designated by the letter b). This total range of approximately four standard deviations remains as great as three standard deviations when not including Negro colleges in the South.

The diversity within and among regions (c) is probably in line with general expectations, but the range of mean scores across certain levels of higher education in two states (note distributions graphed for colleges in California and Minnesota, d and c respectively) may be more surprising. If one supplements the California distributions by indicating that mean scores for entering freshmen at a number of private liberal arts colleges, not falling in the national sample selectivity study, extend the range for this classification to a score of about 135 and that the score of Cal Tech freshmen is considerably beyond that, some idea is gained of extreme ability ranges found in higher education within a single state. The greater variety of ability serviced by the programs in the two states, both seen as higher education "systems" of quality, raises questions about such comparisons among all states.

The range of school means within one major profession has been added as an additional reference point and to further illustrate the concept. Though many medical schools are certainly selective in the

students admitted, as shown here, diversity seems to permeate the profession. The range of ability of medical students is dramatized somewhat by the fact that at one extreme 16 per cent of all seniors have scores below the national mean of entering undergraduate freshmen, while at the other end of the continuum the mean scores of seniors in four medical schools fall above an ACE score of 150. Negro colleges are not included in this distribution.

One might conclude or hypothesize that the diversity among students is greater than can be adequately educated by the existing diversity (or, lack of it) among institutions and programs. In spite of the great differences among the institutional means, as demonstrated, we are aware that the vast majority of schools educate student bodies with a wide range of ability. Some leaders in the ranks of higher education have pointed out that intellectual leveling has moved from the secondary schools to the colleges. Though a number of American institutions are somewhat selective, it may be important to ask whether this selection and placement of students can be improved. Can the admission of the intellectually unqualified in many institutions be avoided? Should those of a lesser ability be educated in particular institutions and should other institutions be reserved for those of highest mental calibre? Should students of unusual ability be guided to student bodies composed of their intellectual peers? Should students of high ability be refused admission by admissions officers when the average ability of their own students is considerably lower? Should colleges with heterogeneous student bodies begin to give greater consideration to sub-cultures and grouping of students in order to facilitate the learning process?

Variations in Some Non-Intellective Characteristics

The above variations in academic ability, even among students in professional schools, may come as no great surprise to many readers. As indicated in numerous recent reports, there is increasingly more interest in variations in human behavior which are less related to general ability, such as personality traits, attitudes and value orientations. *Institutional* differences in these areas, especially in personality traits, have seldom been reported. For example, scores on the Minnecota Multiphasic Personality Inventory (MMPI) for the student bodies of various colleges in this country are practically identical. The National Merit Scholarship winners of 1956, whose individual ability scores would place them in the top two or three per cent of high school graduates, also had an MMPI profile almost identical to that of college freshmen on many campuses. Similar non-differentiat-

ing results for large institutional groups have been obtained on other personality instruments. (It perhaps should be added that most inventories and tests were not constructed for the purpose of discriminating among *groups* of people, especially those classified as normal.)

An assessment device called the Omnibus Personality Inventory (OPI),[4] originally assembled at the Berkeley Center,[5] included eight MMPI scales and a number of other scales chosen particularly to measure intellectual interest and other attitudinal "sets" supposedly related to scholarly activity. The seven more functional scales, from the standpoint of differentiation among student groups, are utilized in this presentation.[6] The non-MMPI scales are: Responsibility, Complexity of Outlook, Originality, Social Maturity (short form), Thinking Introversion-Extroversion, and the Authoritarian F-scale. The first four of these, however, are composed chiefly or entirely of

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[4] Heist, Paul A. and Williams, Phoebe A., Manual for the Omnibus Personality Inventory, Center for the Study of Higher Education, University of California, Berkeley, 1957.

[5] The various scales and items were originally assembled as a research instrument by Drs. John Darley and Martin Weissman, consultants to the Center at the time.

[6] *Brief scale descriptions and sources*

Thinking Introversion-Extroversion: Liking for a reflective thought and work with abstractions; interest in ideas as such rather than their practical outcomes. (Evans-McConnell TSE Inventory).

Social Introversion-Extroversion: Discriminates between those who tend to withdraw from social contacts and relationships and those seeking them and finding satisfaction therein. (MMPI, Drake).

Responsibility: Identifies persons along a continum of social responsibility versus social irresponsibility. (Gough-Meehl-McClosky. University of Minnesota).

Complexity of Outlook: The tendency to perceive and react to the complexity of environmental patterns versus perception and reaction at a level of greater simplicity. (Barron, IPAR Research, University of California).

Originality: A highly organized mode of responding to experience, associated with independence of judgement, freedom of expression, novelty of construction and insight. (Barron-Gough, IPAR Research, University of California).

Social Maturity: Differentiates degrees of general primitiveness of subjects' conceptions of others and of their relationships with them. A more indirect, more personality-centered, less ideological measure of authoritarianism. (60 item short-form version. Webster-Freedman-Sanford, Vassar Research).

Authoritarian Personality (F) Scale: The original fascistic scale (28 items, 45|40 form). Characteristics of high scorers include conventionality, rigidity, identification with power, emotional coldness and prejudice. Scored in a true-false fashion in this inventory. Low scores denote non-authoritarianism. (*The Authoritarian Personality* by Adorno, et al.)

MMPI items. It might be of interest to add that for the groups involved in the data reported here the correlations between scores on all OPI scales and the SAT-Numerical Score are of a zero order and for the SAT-Verbal Score they range from .22 to -.26.

Through use of mean scores on the above scales, diversity among groups of students representing different institutions and sub-groups within single institutions, can readily be shown. Within the confines of this article the idea of diversity on such measured factors or characteristics will be illustrated only by data representing high ability students, those attending a few specific institutions and those attending certain types of institutions. At this stage the meaning of some of the measured personality differences among institutional groups must remain somewhat inferential; establishing the fact of such inferences is contingent upon longitudinal findings of the present research.

The data used here is intentionally restricted to above average or superior students (from standpoint of measured ability *and* achievement at the secondary school level) to more adequately high-light the differences on certain personality variables. Such differences would be larger as greater heterogeneity is introduced on the ability or achievement variables. Another way of stating this is to say that we are "forcing" ourselves to look for differences on non-intellective variables in groups highly selective on an ability and/or academic variable, thus inserting some control across the samples.

TABLE 1

Standard Score Means on Some OPI Scales for the NMS Male Sample and Freshmen Males in Two California Institutions of Higher Education*

Scale	NMS Males	California Institution No. 2	California Institution No. 3
Thinking Introversion-Extroversion	69.0	59.0	66.0
Social Introversion-Extroversion	44.0	47.0	49.0
Responsibility	60.0	50.5	61.0
Complexity of Outlook	57.5	56.0	62.5
Originality	60.0	56.5	63.0
Social Maturity	62.0	56.0	65.0
Authoritarian Scale (F)	39.5	45.0	35.5

*The standard scores were computed by assigning a value of 50 to the mean and a value of 10 to the standard deviation of the personaltiy trait mean scores for the freshmen in a third California institution where the mean ability score is a few points above the national college freshman average.

The standard scores in Table I present some interesting differences among the male students in several freshman groups, all contrasted with a fourth institutional group where the mean scores have arbitrarily been assigned a value of 50. The group represented by the scores in the first column, National Merit Scholarship winners and near-winners, and the students in California Institution No. 3 completed the inventory a few weeks previous to entering college. The other groups, Institution No. 2 and the reference group (noted in the footnote) completed it during their first few days on the respective campuses.

For all three groups in the table and for all scales except one, the standard scores deviate significantly from the reference group (fourth institution). The large sample of National Merit Scholarship (NMS) males (N=659) may be seen as another reference base for comparing the male students in the two institutions. The very high score on Thinking Introversion and the high scores on Complexity of Outlook and Originality for the NMS sample certainly confirm their scholastic potential. In addition to their superior ability we might safely infer that as a group they have the motivation (attitudes and interest) to make them the academic achievers their records show them to be. The high Social Maturity and relatively low Authoritarian scores lend credence to their learning capabilities in that they may be seen as having more flexibility and freedom to learn than those scoring closer to a standard score of 50. Characteristics such as these would carry an individual a long way in an educational environment even if his general ability placed him near or below the average.

The scores of the students in Institution No. 2 approximate the NMS males on only the Complexity scale. However, they vary a half standard deviation (5 standard score points) or more from the students in the reference group on the five scales just considered. This pattern, together with the high ability scores reported for them (more than a standard deviation above the national mean) would indicate that they are a more select group, academically speaking, than found in the majority of college classes. The higher scores, together with the lower score on the F-scale, for Institution No. 3, represent a composite of intellectual attitudes and interests that would "quicken the spirit" of all college teachers. Their scores on the last four scales are significantly higher (or lower) than the elite NMS group. A student body composed of students where fifty per cent score above these high mean values probably offers a very challenging and profitable educational experience of and by itself, notwithstanding faculty and curriculum. Many a college faculty might well be somewhat incidental in the educational experiences of such students.

However, this assemblage on one campus is perhaps quite a rarity and could only be drawn to institutions of noteworthy academic reputations and with excellent faculty.

TABLE 2

Mean Standard Scores on Some OPI and A-V-L Study of Values Scales for Male Students in the NMS Sample Attending Institutions Ranked High and Low on Productivity Criterion§

	Total Samples		*Samples Equated for SAT Scores*	
	High	*Low*	*High* (50)	*Low* (50)
OPI				
Thinking Intro.-Extroversion	71.5	68.5*	70.0	69.0
Social Intro.-Extroversion	45.0	45.0	43.5	46.0*
Complexity of Outlook	62.5	55.5**	60.5	55.5**
Originality	64.0	56.5**	63.0	56.5**
Social Maturity	67.0	61.0**	66.5	63.0
Authoritarian Scale (F)	36.0	43.0**	36.5	42.0*
A-V-L				
Theoretical	60.5	56.0**	59.5	56.0
Economic	42.5	42.5	41.5	44.0
Aesthetic	53.5	46.5**	54.0	46.0**
Social	42.5	46.5*	42.5	46.0*
Political	49.5	49.0	49.5	49.0
Religious	48.5	56.5**	49.5	56.0**

* Differences significant at the .05 level
** Differences significant at the .01 level
§ The standard scores for both inventories have been computed by assigning values of 50 and 10 to the mean and standard deviation respectively of a group of entering freshmen with a mean ability score a little above the national college freshman average.

Among the ways that diversity of student groups might be examined, one more is presented in Table 2 to demonstrate the variation in personality measurements and motivation using data from the highly selected group of NMS students.[7] The male students have productivity and low productivity. This discrimination between "high" and "low" productivity is based on the indices set up by Knapp and

[7] Heist, Paul and Matsler, Frank. Comparisons of High Ability Students Attending Educational Institutions Ranking High and Those Ranking Low in the Productivity of Scholars. Center for the Study of Higher Education, University of California, Berkeley, 1958. (Mimeographed report.)

been classified according to their attendance in institutions of high

Greenbaum in which they determined the number of persons attaining certain defined advanced levels of scholarship per 100 graduates for all institutions.[8] The liberal arts institutions among the colleges ranked as the top 50, those with the highest indices, are included here in the "high productivity" classification; students in any other liberal art colleges are represented in the "low" group.

In addition to mean standard scores on the OPI for the two "types" of institutions, Table 2 also includes scores on the Allport-Vernon-Lindzey Study of Values (A-V-L).[9] The pattern of six scores on this inventory furnishes a supplementary approach to differences among groups of students. Nine scales in the two different instruments differentiate significantly between the males in attendance in the two groups of colleges. As can be readily seen, the more "positive" picture, relative to intellectual endeavor, seems to be presented by the scores of the students attending institutions of high productivity.

Since the SAT mean scores for those groups were also significantly different, a group of 50 students in the colleges of high productivity were matched via SAT total scores with 50 in the low group. Statistically significant differences still appear on four of the previous nine scales at a level which would be due to chance only one time in a hundred. It is of interest to speculate what these few differences do or may mean.

On the basis of our present knowledge of what the OPI and the A-V-L scales measure, most of these students of superior ability in the high group can be described as having a different orientation and very likely a different pattern of motivation than students of the same ability in the less productive institutions. The difference on the Complexity scale together with the one on the Aesthetic scale (A-V-L) indicate both a broader perception of the general environment and of the field of knowledge. Through interviews and comprehensive questionnaires, students scoring high on either or both of these scales have manifested genuine or sincere interest in learning, almost for the sake of learning per se, and the anticipatory zest and enthusiasm in the quest of knowledge that many bring to a game. Good students who score high on these scales are found in the physical sciences as well as in the humanities and the fine arts. The difference on the Religious scale (A-V-L), which is supported by the difference on a correlated measure, namely the Authoritarian scale,

[8] Knapp, Robert H. and Greenbaum, Joseph J., *The Younger American Scholar: His Collegiate Origins.* Chicago: University of Chicago Press, 1953.

[9] Allport, Gordon W., Vernon, P. W., and Lindzey, G., *Study of Values* (Rev. ed.). Cambridge, Massachusetts: Houghton Mifflin Co., 1951.

suggests a greater freedom of thought and that more students in the high group will be experimental in the realm of ideas.

For reasons that need not be considered here many of the students who apply and are admitted to the colleges with high productivity indices come with attitudes, interests and values which seem to give them an advantage in an academic environment. They seem to possess a greater readiness for continued educational experiences than many of the students in the colleges of less scholastic productivity.

SUMMARY

In the examination of differences among groups of students, grouped according to the institutions they attend, an underlying interpretation or conjecture was readily apparent in the questions and statements. Diversification certainly describes the student composition in American higher education. An implied lack of variety in the facilities, programs and educational procedures for this great diversity in students was undoubtedly evident. This diversity has been demonstrated long before this present decade, and it is unlikely that many administrators and faculty fail to recognize this. However, what all this means for the education of persons in fairly homogeneous or very heterogeneous student bodies seems to have escaped diligent consideration. How different the peer cultures, and the impact from such varying social environments, might be in their disposition toward conducive academic climates remains largely uninvestigated.

In conclusion, diversity among college and university students has been illustrated (1) by reviewing the range of academic ability *within* institutions and the variation in mean scores *among* institutions in selected sub-classifications of institutions, and (2) by presenting differences in personality characteristics among select and supposedly rather homogenous groups of students of superior ability-classified schools attended. Allowing for the fact that institutional programs do vary in scope and quality, that institutional climates vary in their hospitality toward undergraduate scholarship, that student bodies vary in the academic ability and motivation of students, and that there are large individual differences in the incoming students, the question about the "correctness" of choice of school for entering students should much more frequently be asked. The data presented would warrant this as a legitimate question for high ability students, and it is perhaps a very pertinent one for all college students.

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STUDENTS' DECISION TO ATTEND COLLEGE*

Phillip Cutright

This paper is concerned with the effect of the educational institution on the motivation of high school students to continue their education beyond their high school years. We will examine the sources of variation in the intended and the actual college going rates among students in a number of different high schools.

Our problem is not a new one. In recent years a number of studies have examined the relationships between a student's college aspirations, his class position, occupational goals and so forth. We may, perhaps, divide these studies into two major types.[1] In the first type a single school is examined and the research is conducted entirely within the ongoing social system of the school. In the other type of study, descriptive statistics for a larger population of students are the principal goal of the research program and a number of schools are sampled, the students within the chosen schools are sampled and then all students from all the schools are combined in the analysis phase of the study.

This study differs in some respects from these two widely used study designs. For the moment we will only point out that neither of these two approaches to the problem of motivation is designed to permit a type of comparative analysis which will allow us to get at the effect on student motives of the educational institution itself. In the case study approach the analysis is restricted to a single school, while the latter study design almost precludes inter-school comparisons because of the small number of cases which result from intra-school sampling. Thus, while excellent estimates of national population characteristics may be made, the same study is unable to measure institutional effects.

The data used in this paper were collected from 8,500 students

* Revision of a paper read at the annual meeting of the American Sociological Society, September, 1959. This research was directed by James S. Coleman and Peter H. Rossi of the University of Chicago, and supported by The College Entrance Examination Board.

[1] The case study approach is used by C. Wayne Gordon in his *The Social System of the High School* (Glencoe, Ill.: The Free Press, 1957). *Background Factors Relating to College Plans and College Enrollment Among Public High School Students,* a study by the Educational Testing Service (Princeton, N. J.: Educational Testing Service, April, 1957, multilith), is illustrative of the national sample method.

in nine Northern Illinois high schools. These schools were selected by sampling techniques which insured the researcher of an adequate representation of what were felt to be the main types of schools. We wanted to insure the drawing of nearly equal numbers of large and small schools as well as having schools of different degrees of athletic and social orientations. The degree to which a school had one or another of these orientations was determined by examination of the senior year books of all the schools in the original sample pool. Schools were then sampled within strata and a final group of ten was selected. Although ten schools were in the original study, one of them had so few students that I have eliminated it from this report.

In the Fall of 1957 and again in the Spring of 1958, a questionnaire was administered to every student in each high school with the sole exception of the freshman class in one of the largest schools. We will here be concerned with portions of that questionnaire which contained information on the child's class position and a question which asked him: "Are you planning to go to college after high school?" To this question the student could answer "yes", "undecided", or "no". Of course he could refuse to answer it as well. Approximately 53 per cent of all students said "yes" or "undecided". Persons responding in this way were said to have an intention to go to college. One further requirement was necessary before a student was counted as being motivated to go to college: he had to have a *stable* intention of going to college — that is, he had to say "yes" or "undecided" in both the fall and the spring questionnaire. The proportion of the school population who had stable college going intentions will be called the intended college going rate.

What we really want to do is measure the "pure" institutional effect on motivation. By "institutional" I am referring to any particular high school rather than to high schools or school systems in general. In order to make this kind of measurement we must first sort out the effects of non-institutional factors known to be heavily related to college going. The method of multiple regression analysis provides us with an appropriate tool.

One set of variables which is always found to be related to college plans hinges on the class position of the students. It would be desirable for us first to separate out the effect of the student's class or family situation before we compare the nine schools and rate them on their impact on student motivation.

If we take, for example, the per cent of the group with white collar fathers and the per cent with college educated fathers, we can correlate

these variables with the intended college going rate for each group.[2] From this set of correlations we can build a multiple regression equation which will predict for any group, an expected value for its intended college going rate based on the relation of the independent variables to the dependent variable in all groups. The difference between the actual and the predicted value is the proportion of the group who are over or under their expected college going rate. We can classify the groups along any number of attributes and examine these residual differences.

Table 1 gives us an over all picture of the nature of the relations in our data. The left hand side of the table shows the product moment correlations among our variables; the first independent variable is the per cent of the group whose fathers were white collar workers; the second gives the per cent of the groups whose fathers had some college education. In the matrix notice the familiar high — very high — correlation between occupation and education. This relationship should help us to anticipate the nearly equal correlation of each of these independent variables with the dependent variable — in this case, the intended college going rate.

On the right hand side of the table we can find the standard deviations, means and beta weights associated with each variable. For example, the standard deviation of the intended college going rate among the 66 groups was 16 per cent while its mean was 53 per cent.

On the extreme right of this table are the beta weights for each independent variable. This is a number indicating what weight ought to be applied to each variable to maximize predictability of the dependent variable. It only applies in real prediction when the variance of all the variables in the equation are equal. As we can see here the variance is different and the adjusted beta weights are shown in the final regression equation given in Table 1. Finally, the multiple correlation of .67 is shown. Notice that it is virtually unchanged from either of the two zero order correlations in the matrix.

We have achieved the ample number of cases shown in this equation by using both boy and girl groups for all four grades in the nine schools. We are now in a position to say how much more or less than the predicted value of the intended rate the actual intended rate is. The difference between the predicted and the real value of the rate will be called a residual. We can now classify the groups on any

[2] Throughout our analysis a "group" is always a school-grade-sex group: for example, freshman boys in school number five would be one group.

TABLE 1

Regression of Class Variables on Intended College Going Rate

N=66

	1	2	Y	S.D.	Mean	Beta Wt.
White collar (1)	—	.934	.651	17.8	36.9	.281
College (2)		—	.659	13.6	32.5	.398
Intended Rate (Y)			—	16.0	53.4	—

$Y = A + .253X_1 + .467X_2$

$R_{y.12} = .67$

characteristic we wish and see whether the mean value of the residuals associated with that characteristic is positive or negative.

Table 2 examines two characteristics of our groups — sex and grade in school. The average residual associated with 35 boys' groups was +4.0, while the average residual of the 31 girls' groups was −4.5 per cent.[3] When we correct for the sex difference and turn to the

TABLE 2

Mean Residuals for Boys and Girls by Grade in School

	BOYS		GIRLS	
	Raw	Sex Adjusted	Raw	Sex Adjusted
Freshmen	4.3	0.2	2.6	7.2
Sophomore	4.2	0.1	− 4.1	0.4
Junior	2.3	− 1.7	− 4.4	0.1
Senior	5.4	1.4	− 11.3	− 6.8
TOTALS	4.0		− 4.5	
N=	(35)		(31)	

main body of the table we can see very little change over time in the motivation of boys to attend college. Apparently the length of time the boys are in school does little to sharpen their desire for more education. The girls, however, present quite a different picture. The freshmen girls are very different in their college going intentions than are girls in the higher grades. It is very clear that as the girls draw

[3] I should note that the reason we have four less female groups is that one of our schools is an all male parochial school. Also in one of the largest schools the freshman class was not questioned, reducing our groups by two.

nearer to graduation from high school, they become less and less likely to have college going plans. Looking at the table as a whole we can say that the level of male intention is high through all four years of high school, while the level of female intention steadily declines over the same period.

Some of you may be wondering what effect the sex difference in intentions has on the beta weights. What would happen to these weights if we were to use *only* girl or boy groups? In Table 3 we can see at a glance that father's occupation (that is whether it is a white or a blue-collar occupation) completely dominates the regression

TABLE 3

Beta Weights and Multiple Correlation For Intended College Rate

Variable	All Groups N=66	Boys Only N=35	Girls Only N=31
White Collar	.281	.585	.347
College	.398	.057	.454
$R_{y.12}$	.67	.64	.79

equation for boys while maintaining a second place position for girls. Of greater interest, however, is the shift in the accounting power of the variables: While multiple R is .64 for the boys, it is .79 for girls. Clearly class is a far better predictor for the girls. Other variables, principally the occupational aspirations of the boys will, if added to the boy's regression equations, give us an equally good level of predictability. This seems to be the key factor that is disturbing and lowering multiple R for the boys. We should bear in mind the accounting power of white collar aspirations of boys for we will mention it again at the end of the paper.

We will now turn to an analysis of actual college going rates. In the Spring of 1959 an effort was made to contact every student who had been in our study in 1958 and who had then expressed an intention to go to college. Of the 1029 seniors who were planning to go on to college, we located 85%. Persons we were unable to locate were counted as non-college goers. We can compute, for each school's senior boys and girls, the per cent who actually went to college.

We begin our analysis by putting all of our 17 groups into a single regression equation. We will then make two equations, one for each sex. In spite of the problem of a very small number of groups I want to present the data, such as it is, since it provides some interesting

contrasts with what has gone before. For example, comparison of the accounting power of class for the intended and actual college going rates is given in Table 4.

TABLE 4

Beta Weights and Multiple Correlation for Intended and Actual College Going Rates

N=17

	ACTUAL RATE		INTENDED RATE	
	Beta Weight	Mean	Beta Weight	Mean
White Collar	.571	38.9	.590	38.9
College	.324	24.3	.124	24.3
Rate	—	32.7	—	51.8
$R_{y.12}$	.88		.70	

First, comparing the beta weights of the two sets of data shows rather little difference. In both cases father's occupation has a considerable advantage — though I would not like to over-interpret this difference. We should notice that a difference of nearly 20 per cent exists between the average intended and the average actual college going rate. While fully one half of the seniors intended to go to college, only 33 per cent actually were found in college a year later. Of equal interest is the shift in the accounting power of the variables — while a multiple R of .70 accounts for one half of the variation in the intended rate, almost 80% of the variation in the actual rate is accounted for by the same variables.

We said earlier that we wanted to explain the effect of the school on motivation to attend college. We began to do this by obtaining residuals for the intended college going rate for each grade-by sex-by school group. Let us make the assumption that when we have eliminated the effects of social class on the intended rate, we are left with a residual which approximates the effect of the school on the college going motivation of its students. (We do not have to consider removing the effects of sex and grade in school because these are assumed to be constant). The question now becomes: "What is the relationship of the intended residuals to the actual college going rate?"

Table 5 presents the correlations of the intended residuals (not corrected for sex) with the fulfillment index. The fulfillment index measures the degree to which a group's intentions to go to college are matched by its actual rate of attendance. Thus we might say that if a group's actual college going rate equalled its intended rate, it would

be high on the fulfillment index. If 70% of the group intended to go to college but only 40% actually went, it would be low on the index.[4] Table 5 shows, contrary to our best hopes, that a very strong negative relationship holds between the intended residuals and the fulfillment index. This finding also holds up when boys and girls are run separately. Notice that the sex difference boosts the correlations considerably. Also note that the correlation is lower for girls than for boys. We might interpret the table as follows: the school exerts a

TABLE 5

Correlation of Intended Residuals with Fulfillment Index

All Groups	− .87	(17)
Boys Only	− .73	(9)
Girls Only	− .60	(8)

considerable impact on the motivation of its students to attend college, but its effect is not sufficiently powerful to be realized in actual college attendance. It is easier to want to go to college than actually to attend.

While we might just leave the subject at this point it is also possible to question certain assumptions implicit in the fulfillment index. The major assumption is that it measures the degree to which a group has met its potential college going rate. A group may, after all, have a very low level of intention and thereby achieve a good score on the fulfillment index. While I do not think that this strongly affects our conclusions I would suggest putting the intended rate itself into a regression equation along with the class variables to see what its effect is, independent of class.

If our interpretation of Table 5 is the correct one we should find that the beta weight given to "intentions" will be small compared to the beta weights associated with the social class variables. As we can see in Table 6, this is indeed the case. The class variables far outweight intentions as predictors of actual college attendance. Intentions do not carry any weight with the boys, and carry only second best

[4] Note that large values in the fulfillment index indicate the *lack* of fulfillment. In order to have the "intuitively correct" sign for the correlations in Table 5 we reversed the usual manner of taking the residuals and subtracted the actual from the predicted values. Thus a small value for the intended residual is "good." The negative relationship tells us that these small values are strongly associated with the large values of the fulfillment index.

weight for the girls. This is not to say that intentions is not a good predictor alone — it is simply that class variables are somewhat better and seem to be the "real" factors behind actual college attendance.

TABLE 6

Beta Weights of Independent Variables With Actual College Going Rate: Within Sex Groups

	Boys N=9	Girls N=8
White Collar	1.120	—.767
College	- .255	1.163
Intentions	.018	.600

Finally we may correlate the intended residuals with the actual rate of attendance. These correlations, shown in Table 7, are not too impressive but we should also remember that they will not partial out if put into a regression equation with social class variables. We could account for about 9 per cent of the variance in the actual college going rate using the intended residuals. If we think now, as we have before, of the intended residuals as a measure of the school effect, we see that one possible conclusion to draw out of these last tables would be that the school does have some effect in motivating students to want to go to college, but that this effect is greater for girls than boys. So far as motivating students sufficiently to get them *into* college, the school has virtually no effect on boys but does have some effect on girls. One explanation of this sex difference is found in the very high correlation of the occupational aspirations of boys with college intentions and the obvious and frequently observed finding that boys look upon college as a means to achieve their occupations goals. The girls lack the occupational rabbit. Although their level of actual attendance is lower, the school can, and apparently does have some effect in giving the girls the extra push they need towards a college education.

TABLE 7

Correlation of Intended Residuals With Actual Rate of Attendance

All Groups	.31	(17)
Boys Only	.02	(9)
Girls Only	.27	(8)

Phillip Cutright is Assistant Study Director, National Opinion Research Center, University of Chicago.

DISCUSSION AND CRITIQUE OF SOME VARIABLES IN THE SOCIAL PSYCHOLOGY OF SCHOOL-TO-COLLEGE TRANSITION

Martin Deutsch

These papers are a provocative contribution to the recent discussions of sociological and psychological factors influencing the educational continuum. Though these papers are focused on the higher educational stories, their implications are directly relevant to the kindergarten in the basement. The social and psychological variables here applied to participation and success in college — social class, sex, and personality and attitudinal factors — are the same as those which have been found to be influential in school performance at the elementary and secondary levels. This is not to say that these variables operate at all levels in the same way, but, rather, that they reflect the continuity of broader social factors. The effects of those factors, if cumulative, would have the strongest expression at the point of decision as to college entrance and choice of college and career goals. The study of this problem becomes an additional social science window into the study of the social determinants of individual development in various social contexts.

These social variables are the ones dealt with in the current papers, and in a search for basic assumptions that would unify the approach in these diverse papers and studies reported, one is led to an aspect of the "moderate" position suggested by Rogoff that "social class facilitates college-going independent of ability." If we add that ability facilitates college-going, but not independently of social class, the combined assumption seems not to be inconsistent with the position and findings of any of the various papers.

In the Cutright paper, father's occupation accounted for a substantial portion of both the "intended rate" of college-going and the actual rate. When he adds sex of subject to the determinants, a relatively small residual is left, which he attributes to the influence of the school. This school influence, however, would seem open to question: how is the effect of the school on college-going behavior to be differentiated from the effect of the community and its class orientation? Cutright, by bunching his schools, might have obscured differences between them which might have provided more complete interpretation of his residuals. This seems likely when the papers of Heist and of Rogoff are considered. The former reports quite significant and extensive intra- and inter-school variability, while Rogoff reports on model

community patterns of opportunity that find expression in scholastic participation. It is possible that if Cutright's schools were considered separately in terms of the kind of patterns proposed by Rogoff, the residuals would be more clearly related to their social context and less attributable to an undifferentiated "school" as an impelling force.

McArthur's paper raises some serious questions of interpretation of the effects of social class on academic performance. His comparison of a public school and a private school population fails to take adequately into consideration the selective nature of the public school sample. Here is a sample of public school graduates choosing high status colleges. One might suspect that this population is highly vertically mobile, or, in the case of scholarship students, highly intelligent, and, as McArthur indicates, more specifically occupationally oriented than the private school population and perhaps also than the public school graduates who do not go to high status colleges. Heist's findings certainly bear out the selectivity of some colleges, presumably especially the high status ones. I would like to suggest that McArthur's public school group might well be different from the general public school group — and perhaps more different from it than from McArthur's private school group. In addition, the private school group is very likely to be much more homogeneous on many important variables, such as family background and social stability, than is his public school group, and therefore equation of the two as subgroups is open to question. In terms of McArthur's specific findings, it might be pointed out that his private school group can afford to study the classics: a notoriously financially unrewarding occupation. Also, one might ask how many were really serious about the classics and were not just marking time before stepping into a predetermined occupational niche. In other words, the occupational orientation of the public school group is probably very realistic, and this realism may account for the Zeigarnik differences. It might be possible to describe the private school students as a-motivational. Historians have had a lot to say about the importance of the undeveloped West in stimulating an active and vigorous culture; perhaps in miniscule proportion we see the same in the need-achievement motives of the public school group which McArthur believes are reflected in the Zeigarnik differences.

McArthur's discussion of differences in thinking between his two groups also merits further examination. He takes too lightly the possible — I would say probable — effects of the differential training received at private and public schools. For example, we don't really know the effects on the thought process itself of the thoroughness of examination of a single topic which is possible in the smaller classes

of the private school and which the public schools cannot afford. Certainly before attributing the bulk of these differences to class differences we would have to study, probably longitudinally, the relationship of cognitive style to educational methods and contexts. It is too bad also that McArthur didn't discuss more fully the question of the emotional differences between the groups. Does the reported private school impulsiveness "not maturely worked through" represent an intellectual inhibiting force which may influence thought and help explain the lower scientific interests?

It would be interesting to be able to compare McArthur's male ivy league population with Brown's female ivy leaguers. With other evidence indicating the importance of sex in college-going intention and actuality, a comparison of these two populations might be especially fruitful by holding more constant factors of class and intellective style while studying sex differences and possibly differences in prior training. In other words, we could appropriately juxtapose Vassar and Harvard to investigate the sex variable.

The importance of sex differences in college participation is emphasized in Cutright's discussion. It is possible that girls can be more accurate in their estimates about college-going because their perceptions are less colored by occupational needs. Whereas the occupational and need-achievement orientations of boys tend to result in their seeing college as a means of attaining status and economic security, the dominant orientation of girls is still marriage and home and achievement through the marriage partner. One wonders if in Brown's study the girls who are seen as most socially mature were those who from an earlier age had more defined college-going and occupational goals, with an earlier non-traditional attitude toward marriage.

The combination of McArthur's private school date and Cutright's sex data leads to a question of whether it is private school and sex *per se* which have the influences noted on college-going, or whether it may not be need-achievement and occupational motivation which are the real influences here, cutting across the demographic variables. It might be that Brown's socially mature girls, regardless of class, are most similar to the Cutright females who accurately predict college attendance, and that females who further specify occupation goals at an early age would be more likely to demonstrate social maturity on Brown's criteria. But the underlying determinant might also be family orientation and community pattern, rather than direct social class or sex-determined factors.

The fact that need-achievement, or, for example, primary family orientation, could be seen to cut across class and sex factors — though

being influenced or even initially determined by them — leads to a note of caution in the interpretation of class and sex as causes for observed behavior. This is a very complex area where many of the parts may seem at moments to offer an explanation for larger phenomena, but where the mechanism of action may really be through an intermediary or through a series of closely clustered and yet disparate variables. Therefore, it is necessary not to achieve closure after demonstrating the relationship between demographic variables and college-going, but to investigate relationships of both college-going and demographic variables to such factors as primary family structure, need achievement, occupational goals, and personality and attitudes. Some of the current contributors have related two of these sets of variables, but none has dealt on all three levels. It would seem that this should be one of the primary tasks for future research in this area.

In the excellent Vassar studies of Brown, Sanford, and their colleagues, is one of the initial attempts systematically to explore the role of personality and other non-intellective factors in college performance. In a sense, Brown's problem, though potentially very closely related to those of the other four contributors, is primarily focused on a different dimension. Though the relationship of non-intellective factors to college performances is an important one, there are certain social consequences to consider. One might seriously question the propriety of colleges selecting or evaluating students on other than intellectual performance (barring, of course, debilitating maladjustment). The danger here is that intellectual development can be subordinated as a goal to personality development under the guise of striving for the "well-rounded, mature personality." This could be an avenue to a "compromised" personality, where the intellectual is modulated in terms of the characterological. Also, who is to determine the criteria for a socially mature student? After all, a college faculty in American society is a social out-group, and the great bulk of the graduates are not going to live within the academic *zeitgeist*. In addition, the girls who most fit into the faculty criteria would tend to reject the peer reference group for the faculty frame of reference. One wonders if this does not just promote conforming behavior in more sophisticated cultural contexts. Also, as colleges become more personality conscious, will this create pressures toward a modal college personality type that tends to erase individual differences? What happens in such a system to the creative but idiosyncratic intellect or personality? In Brown's Vassar, one feels, these things will not happen, and the idiosyncratic individual could flourish on the crest of the low F score. But this is an unusually sophisticated and avant-garde social science operation, which

if applied elsewhere could have different consequences. I must admit a somewhat ambivalent nostalgia for the classical university format, where the goals were intellectual and the student's personality remained a private property.

The question of non-intellective factors and their potential influence in student selection becomes even more pertinent in the light of Heist's discussion of differences among colleges. If different colleges more and more attract students of particular types and reject those who are different, how much more limited will college-going opportunity become, and how much more decisive will be economic and social factors? What if a student of Type A lives near a Type B college to which he could afford to go, but travel and living expenses at a Type A college would be prohibitive? Could such situations arise to further complicate college-going decisions? Another product of this process would be the creation of much greater homogeneity within colleges.

Future research might be conducted on the effects of psychometric and social science intervention in both high school to college transition and college development. The new prospective college student is literally bombarded with measurements, evaluating him along practically every conceivable dimension. What is the effect on students of this assault? Are those with a proneness to test anxiety unduly discriminated against, and is an anxious society, fearful of taking a chance, leaving any doors open for the atypical student?

All this points to the need, not for social scientists to return to what Fishman has pointed out as a long-term neglect of the college-going process, but for them to study it more intensively and with a greater variety of techniques not limited to tests. This area could be a very productive window, as mentioned at the beginning of this discussion.

These are intriguing papers raising many questions on various levels from methodology and data interpretation to the social philosophy of educational purposes, and the Journal of Educational Sociology is to be thanked for this opportunity to discuss these issues and relate some of our thinking.

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